

Weekly Summary Report

USEPA Oversight, Sauget Area 2, Sauget, IL

WA No. 224-RXBF-05XX / Contract No. 68-W6-0025

Week Ending Friday April 23, 2004

This report summarizes the Interim Remedial Action (IRA) work conducted by Solutia and its contractors from April 19 through April 23, 2004 at Site R, Sauget Area 2. The current IRA fieldwork consists of barrier wall trenching and backfilling.

Contractors Onsite

Inquip Associates Inc. (barrier wall construction contractor)
PSI (geotechnical testing subcontractor)
Pangea (subcontractor to Inquip for site maintenance)
URS (primary consultant for Solutia)

Work Performed This Week

Work at the site continued with a crew of Inquip operators and laborers performing site and trench maintenance activities. During the week, no additional length of trench was excavated with either the small trackhoe or the Koehring trackhoe on the east-west leg at the southernmost section of the barrier wall. The hydraulic clamshell rig broke down for three days due to a damage to the track, which will be replaced with a new one over the weekend. The mechanical clamshell rig, after excavating the third panel south of the box culvert location to the bedrock depth (approximately 130 feet deep) on April 21, mobilized to the south end of Site R to clean the trench bottom. Backfill materials were placed into the trench on three days of the week.

Groundwater Migration Control System (GMCS)

The river elevations were generally invariable during the week, with a range between 386.88 feet above mean sea level (amsl) and 387.32 ft amsl. As a result, the combined flow rate of the extraction well system was relatively consistent, ranging from 1,290 gallons per minute (gpm) to 1,370 gpm.

The eight barrier wall piezometers, with four inside and the other four outside the barrier wall alignment, continued to monitor the groundwater water elevations adjacent to the barrier wall alignment. Table 1 shows the river and piezometer water elevations measured on April 23, 2004 (2:00 PM).

At areas where the barrier wall is in place or partially in place, the water elevations at the piezometers located east (hydraulically upgradient) of the barrier wall were generally within two and a half feet higher than those at the piezometers located west (hydraulically downgradient) of the barrier wall for the week. However, the river elevations were normally higher than the piezometers located west of the barrier wall. This indicates that a hydraulic trough might have formed along the barrier wall alignment, resulting from the active pumping at the site.

This does not apply to where the barrier wall has not yet been installed. Essentially, there was no difference between the water elevations in the two pairs of piezometers located at the north and south ends of Site R (P1S/P1N and P4E/P4S). This is believed to be because of the current absence of barrier wall at these locations and also because each pair of these piezometers are aligned north-south, which is parallel to the river and perpendicular to the general groundwater flow direction.

TABLE 1
River and Piezometer Water Elevations – April 23, 2004 (14:00 PM)

	Elevation (ft above mean sea level)
River Level	387.32
Piezometer 1S – inside wall (northern-most pair)	386.42
Piezometer 1N – outside wall (northern-most pair)	386.14
Piezometer 2E – inside wall (north-central pair)	387.27
Piezometer 2W – outside wall (north-central pair)	384.95
Piezometer 3E – inside wall (south-central pair)	385.96
Piezometer 3W – outside wall (south-central pair)	385.16
Piezometer 4E – inside wall (southern-most pair)	386.19
Piezometer 4W – outside wall (southern-most pair)	386.11

Stormwater

No stormwater activity took place this week.

Slurry Mixing

Approximately 73 tons of bentonite gel was used to mix slurry this week. The slurry, when pumped from the south holding pond to the open trench and the third panel excavation in the northwest corner of the site (south of the box culvert), was tested frequently to assess its viscosity and adjusted with a blending pump using water from the fire hydrant, as necessary. The viscosity of the slurry was measured using a Marsh funnel, with results generally meeting the specification.

Spoils Handling

During the week, numerous truck loads of spoils were transferred from the southern portion of the exclusion zone adjacent to the barrier wall trench to the temporary stockpile area on top of the landfill. A bulldozer was used to level the spoils at the temporary stockpile area.

Barrier Wall Construction

Inquip continued excavation of the trench along the south arm of the barrier wall alignment with the hydraulic clamshell rig for the first two days and with the mechanical clamshell rig for the remaining three days. The mechanical clamshell, Liebherr 855, also excavated the third panel (approximately 28 feet south of the second panel) to the bedrock at 130 feet below ground surface during the first two days of the week.

As of April 23, the open trench was approximately 1,280 feet in length along the barrier wall alignment from station 8+20 towards station 21+00 (please refer to Solutia's map for locations).

Fresh bentonite slurry was pumped into the open trench and the third panel south of the box culvert location as needed to keep the excavation open. Slurry samples were collected from the top and the bottom of the trench daily; fresh and trench slurry samples were tested for viscosity, density (unit weight), filtrate loss, pH and sand content during the week. Six of the ten bottom trench slurry samples and one of the five top trench slurry samples exceeded the viscosity specification (with results between 108 and 159 seconds to pass through the Marsh Funnel; the specification is between 40 to 100 seconds). The viscosity results of fresh slurry samples were below the specification range on three days of the week. The density results of the trench slurry were satisfactory; however, those of the fresh slurry samples were slightly below the corresponding specification. The results for filtrate loss, pH, and sand content in these samples generally met the specifications. To address and document the frequent occurrences of the abnormal viscosity results for the trench slurry samples in the past several weeks, Solutia issued a notice of non-compliance (No. 4) entitled *Slurry Trench Viscosity Testing* to Inquip on April 20.

During the week, Inquip mixed and placed into the trench approximately 780 cubic yards of backfill materials. Backfill operations took place on three days of the week. The backfill consists of spoils with the addition of approximately 15 percent of clay and one percent of bentonite (from trench slurry) in dry weight. The backfill was tested by PSI for slump, unit weight and moisture content. All test results reviewed met the minimum requirements. Additional tests on the backfill, including permeability and gradation, were to be tested offsite by Inquip's contract laboratory.

- The bottom of the trench at and ahead of the backfill toe was cleaned using the clamshell rig prior to the backfill placement. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and confirmed in two locations manually with the downrigger (plumbob on wire). Two samples were collected by PSI with a clam sampler from the top of the placed backfill in the trench prior to backfill placement daily. These samples were visually checked to ensure that the backfill surface in the trench was clean and free of any sand.
- During the week, the trench depths were generally measured once at the end of the day. The afternoon trench depth measurements were made every 100 linear feet of trench, with 20-foot spacing of measurements on either side of the backfill toe. The trench depth measurements from April 23 after the backfill placement into the trench are shown in Table 2. The trench profile is depicted in Graph 1, and is compared to the trench depth profile measured end of the previous week (April 16). Graph 2 shows the overall progress of the barrier wall construction.

Other Activities

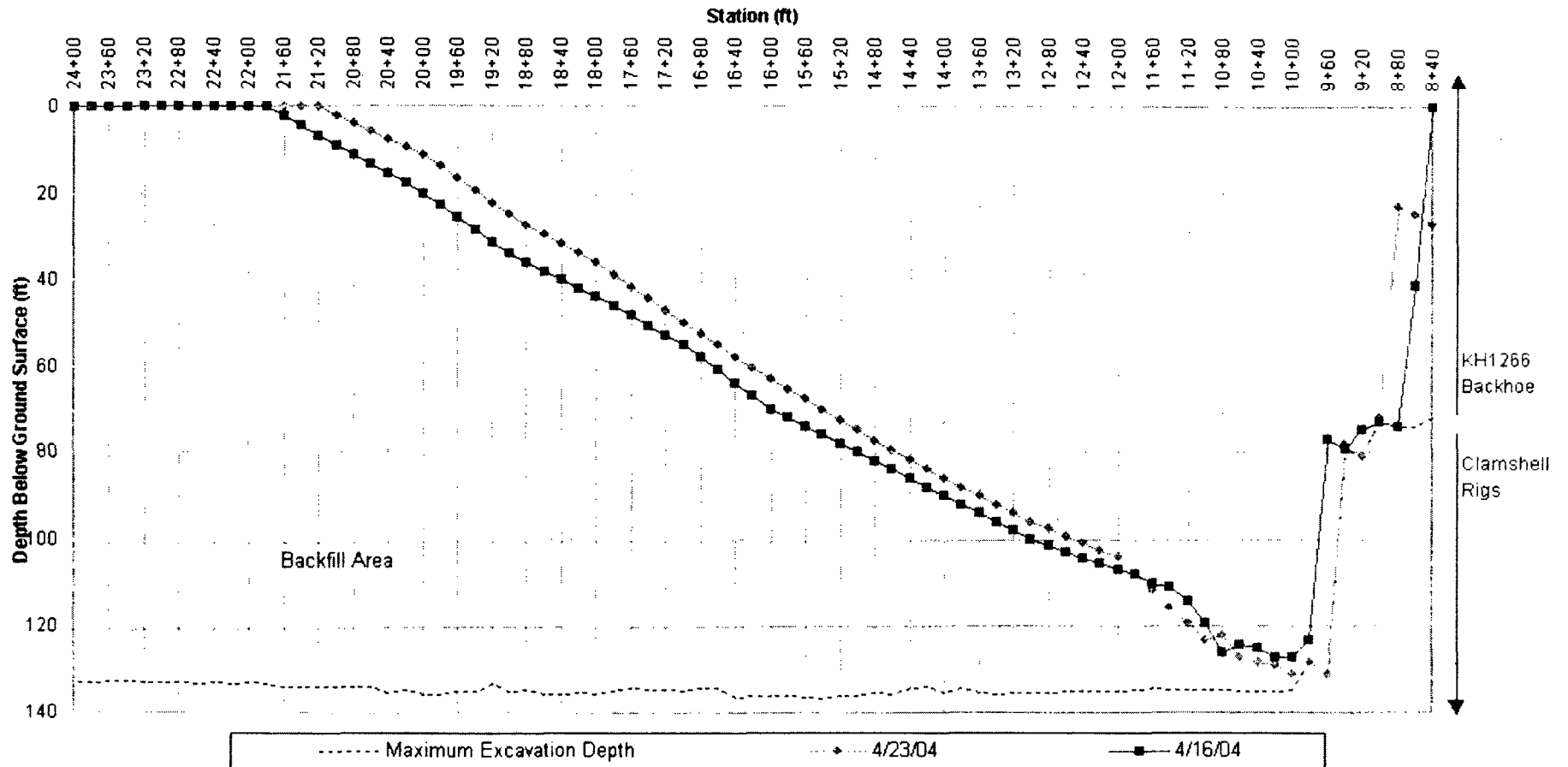
Pangea was onsite during the week to cut through the concrete road located at the north side of Site R to prepare for future barrier wall excavation. The concrete to be removed for the barrier wall construction measured approximately 700 feet (length) by 4 feet (width) by 10 inches (thickness). By the end of the week, the concrete removal activity was approximately 15 percent complete.

TABLE 2

Trench Profile (Downrigger Measurements) for the Barrier Wall Trench – April 23, 2004 (PM)

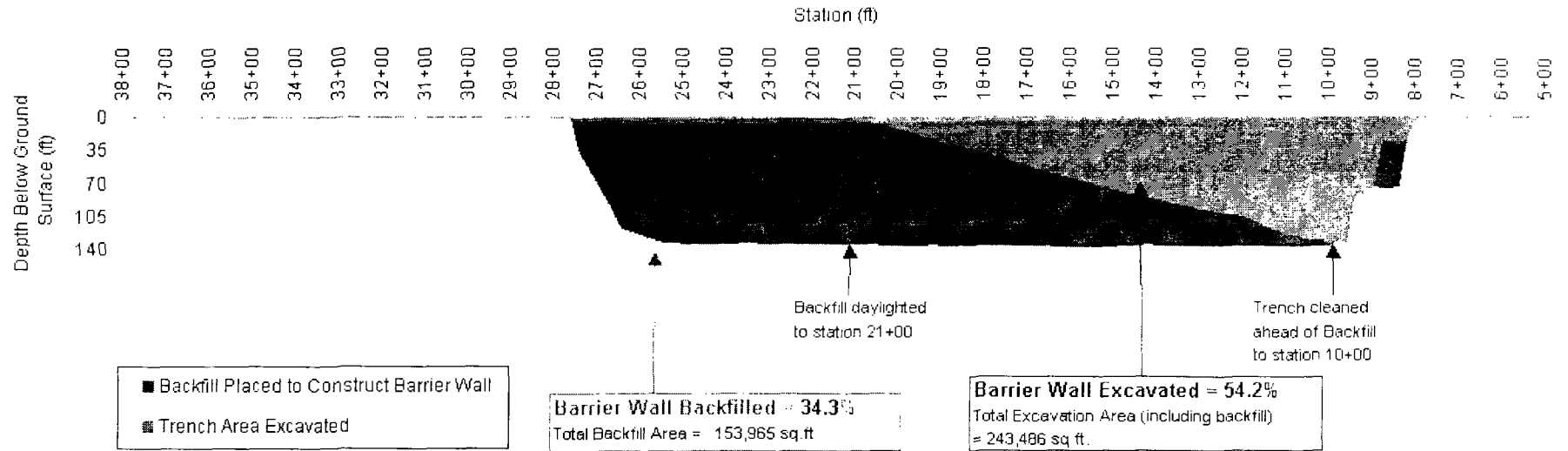
Station ID	Depth to bottom (ft below ground surface)
8+20	22
8+40	27
8+60	25
8+80	23
9+00	72
9+20	81
9+40	78
9+60	131
9+80	128
10+00	131
10+20	129
10+40	128
10+60	127
10+80	122
11+00	123
12+00	104
13+00	96
14+00	86
15+00	75
16+00	63
17+00	50
18+00	36
19+00	25
20+00	11
21+00	2

Graph 1 - Weekly Barrier Wall Construction Progress
April 19 to April 23, 2004



Note: Data plotted for the week through PM measurements on 4-16-04 and 4-23-04.
 Some data points are interpolated between the available data points where trench depth measurements were read.

Graph 2 - Barrier Wall Construction Progress by April 23, 2004 (PM)



Note: Data plotted for week through PM measurements on 4-23-04.

Photo for the week:



Pangea cutting through the concrete along the Riverview Road (April 19, 2004).



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04/26/2004 08:11 PM

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cc:

Subject: Notes of April 20, 2004 Meeting

Here is a summary of the April 20, 2004 construction meeting. Please let me know if you have any additions/corrections.

Please also remember that the next call is on Tuesday April 27, 2004. The call in number is 954-797-0718. The Participant Code is 758751.

Attendees:

Nabil Fayoumi
Sandra Bron
Steve Smith
Glen Kurowski
Chris English
Richard Williams
Richard Ashley

Safety:

- There have been no incident/injuries in the past 97 working days. Daily safety meetings continue each morning prior to beginning the work day.

Excavation at the south end of the site has extended into the debris area; however no PPE upgrades have been necessary. Our contingency plan is in place and additional air monitoring is being conducted as the excavation progresses to the east.

On Thursday, April 15, safety awards were handed out to the workers to commemorate more than 20,000 continuous safe work hours.

Slurry Wall:

- Excavation and backfilling continue. Current activities center on mixing and placing backfill from approximately Sta. 22+50 to Sta. 11+20. Approximately 1,500 cubic yards of prepared backfill were placed last week. About 40 feet of the trench bottom is cleaned to rock daily at the toe of the backfill slope, prior to placing additional backfill.
- The Koehring 1266 trackhoe is excavating at about Sta. 10+00 to provide trench volume to accommodate the slurry that is displaced by the backfill operations. The 1266 hoe was

inactive for a couple of days while the operator was getting his required physical updated.

- The hydraulic clamshell continues to excavate panels between Station 10+00 and Station 11+00.
- The mechanical clamshell is excavating panels at the northeast corner of the wall. When these panels are completed, the crane will move to the south end to break rock along the south leg. This will likely take place Wednesday or Thursday of this week.

GMCS Pumping System:

- Extraction wells are currently operating in accordance with the pumping rates consistent with the river level lookup table for “no wall” conditions. We are pumping about 1300 GPM or about 1,800,000 GPD.
- The Weekly Oversight Report indicated that the extraction wells pumping rates were not sufficient to maintain the required hydraulic gradient control. This is incorrect. Evaluation of all of the water level data including the piezometric levels and the river stage, demonstrates that control of the system is being maintained.
- CH2M Hill will review the ROD regarding the provisions for piezometric response lag time.
- Piezometer P-2 East was replaced on 4/16/04. However, the new transducer may still need troubleshooting.

Other Items:

- Work will continue to progress on the basis of five-10 hour shifts per week. There are no plans for weekend or night shifts at this time.

Next Meeting:

- The next regular meeting will be on Tuesday, April 27, 2004 at 10:00 am.

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